Town of Amherst
Department of Public Works
2004 Water Quality Report

Dear Customer:

In the year 2004, drinking water supplied by the Town of Amherst (PWS ID#1008000) met all U.S. Environmental Protection Agency (EPA) and state drinking water health standards. This annual report will detail where town water comes from, what it contains, and the risks water testing and treatment are designed to prevent. This is the seventh year this report has been disseminated. We are proud to announce that in 2004 the Amherst Water Department has been recognized by the Massachusetts Department of Environmental Protection (MADEP) for outstanding performance and achievement, and has met all water quality standards for the past five years. Although much of the information in this report is required, we will supplement those elements with information of interest to the public.

1. Water Sources

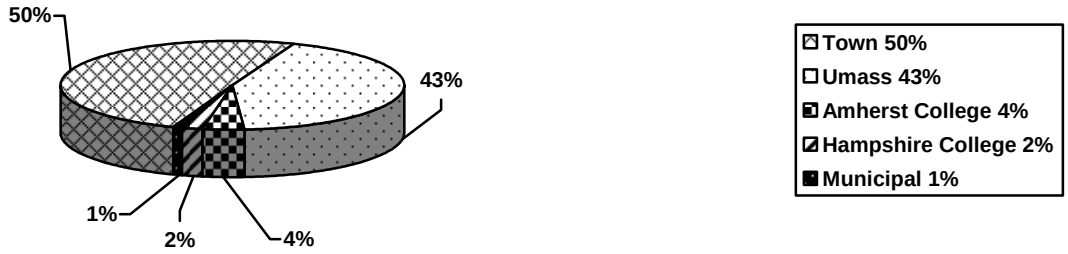
The Town currently has seven sources that contribute to meeting the water demand: Atkins Reservoir, the Pelham Reservoir System, the South Amherst Wells (#1 & #2), The Brown Well (#3), the Lawrence Swamp Well (#4) and the Bay Road Well (#5). Both surface water supplies, Atkins and Pelham, and Wells 1, 2 & 3 are used year round on a daily basis to satisfy the required demands. These five sources supply approximately 90% of the total water produced. Wells #4 and #5 operate during high demand periods and summer months when the reservoirs are low. These two wells produce a combined 10% of the water supply.

In 2002, a Source Water Assessment (SWAP) was completed on the Amherst Water system by the MADEP. This SWAP report assesses the susceptibility of the Towns drinking water sources to contaminants and outlines recommendations for drinking water protection. A copy is available at the Department of Public Works and online at www.mass.gov/dep/

2. Water Consumption Data

The average daily water consumption for the year 2004 was 3.66 million gallons, with a peak demand of 4.773 million gallons on May 15, 2004.

Water Consumption FY04



3. Substances Found in Tap Water

In order to ensure that tap water is safe to drink, the MADEP and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at 800-426-4791, or online at www.epa.gov. Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

Microbial Contaminants- such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic Contaminants- such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.

Pesticides and Herbicides- may come from many sources such as agriculture, urban storm water runoff, and residential uses.

Organic Chemical Contaminants- including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive Contaminants- which can be naturally occurring or be the result of oil and gas production and mining activities.

4. Vulnerability

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and some infants can be particularly at risk for infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

5. Lead & Copper

Elevated levels of lead and copper in drinking water usually indicate water that has corrosive qualities and may attack the household plumbing. Most homes use copper piping, and the solder used to hold the fixtures together might contain lead (lead in solder was discontinued in 1989). All water supplies in Amherst are treated for corrosion control by the addition of sodium hydroxide to reduce corrosion. In the last required sampling done in 2002, water samples from thirty-nine homes were analyzed, and the results are summarized in the table below. Only 1 sample was found to have lead levels over the action level (AL).

Substance	MCLG	Highest Level	90% Value*	Action Level
Lead	0 ppb	6 ppb	4 ppb	15 ppb
Copper	1.3 ppm	0.12 ppm	.042 ppm	1.3 ppm

*The 90% Value is the value below which 90% of the data falls. If the 90% value is below the AL, no further action is necessary

6. Treatment Plant Efficiency

All water from surface water supplies is treated by coagulation of the insoluble contaminants and then filtered through a fine sand-like material. The effectiveness of this process is measured by the cloudiness of the water (turbidity) leaving the treatment plant. Turbidity occurs naturally as a result of soil runoff due to turbulence in the tributaries that supply the reservoir. The following turbidity data illustrates the daily average performance of the two water treatment plants that serve Amherst. Drinking Water Regulations require the turbidity to be less than 0.3 in 95% of the samples.

Samples are taken every 4 hours	Raw Water Turbidity		Treated Water Turbidity	
Treatment Plant	Annual Average	Maximum Reading	Annual Average	Maximum Reading
Centennial	0.52	1.11	0.10	0.15
Atkins	0.37	0.46	0.10	0.21
Note: All units measured in NTU= Nephelometric Turbidity Units				

7. Water Quality

The following table lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. All water sources are analyzed for the following chemical substances: inorganics (metals and salts), nitrate, nitrite, lead, copper, disinfection byproducts, volatile organic substances (petroleum and solvents) and synthetic organic compounds (herbicides and pesticides). All of these substances that were detected were below the federal limits. The table below indicates contaminants that were detected in your drinking water. None of these substances were above the levels designated by the Safe Drinking Water Act as being a health risk. The following definitions will help explain the water quality table:

Important Drinking Water Definitions:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants (e.g. chlorine, chloramines, chlorine dioxide).

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

I. Regulated Substances	Date Tested	Unit	MCL	MCLG	Highest Detected Level	Range of Data	Major Sources	Violation
a) Inorganic Substances								
Fluoride	6/2/2004	ppm	4	N/A	1.5	0.15 - 1.5	Added to prevent tooth decay	NO
Barium	9/1/2004	ppm	2	2	0.01	ND - 0.01	Erosion of natural deposits	NO
Nitrate (measured as nitrogen)	8/25/2004	ppm	10	10	5.7	0.05 – 5.7	Runoff from fertilizer ; Leaching from septic tanks, Sewage; Erosion of natural deposits	NO
b) Disinfection Contaminants								
Total Trihalomethanes	Quarterly	ppb	80		59	9.11 - 59.9	Byproduct from chlorination	NO
Haloacetic Acids	Quarterly	ppb	60		79	11 - 79	Byproduct from chlorination	NO
Combined Chlorine	2 Times a Month	ppm	4.0	0	1.2	0.32 - 1.2	Applied Disinfectant	NO
c) Radioactive Contaminants								
Gross Alpha (pCi/l)	9/24/2003	pCi/l	15	0	0.66	0.26 - 0.66	Erosion from natural deposits	NO
Radium 226 & 228 (pCi/l)	9/24/2003	pCi/l	5	0	0.75	0.21 - 0.75	Decay of natural and manmade deposits	NO
II. Unregulated Substances	**Date Tested**	**Unit**	**MCL**	**MCLG**	**Highest Detected Level**	**Range of Data**	**Major Sources**	**Violation**
Sodium	9/8/2004	ppm	None	None	16	12-16	Road salt; Chlorine; Lye	NO
Sulfate	8/20/2004	ppm	None	None	29.1	7.2 – 29.1	Natural deposits; Landfills; Dumps;	NO

8. Water Rates:

Tighe and Bond Consulting Engineers of Westfield, MA produce an annual water rate survey:

- 298 communities responded to the survey
- costs are based on a household using 90,000 gallons annually
- annual cost/household ranged from $45-$1215
- average annual cost in Massachusetts was $321
- Amherst cost was $244/year
- 74% of the towns in Massachusetts have a higher water rate than Amherst
- The complete survey may be viewed at www.tighebond.com

9. UMass Water Conservation & Reuse Project:

Conservation – In 2004, UMass embarked on an aggressive water conservation project. The project involves replacing or retrofitting all toilets, sinks and showers on campus with low flow devices. The expected water savings when the project is complete will be in excess of 20%.

Water Reuse – UMass will also be doing a pilot project in the summer of 2005 to evaluate the use of treated wastewater for boiler make-up water at their existing power plant. If the trial project proves successful, the technology will be used in the new power plant that will be completed in 2008 and will save about 44 million gallons of water annually.

For more information, call Robert Pariseau,
Director of Water Resources, Amherst DPW at (413) 256-4050 (ext. 13)
Email: pariseau@amherstma.gov
This report is also available on the web at www.amherstma.gov

10. Household Hazardous Waste Disposal Solutions - Gasoline and paint are particularly dangerous to the town and private wells and should never be disposed of on the ground or in septic systems. Below are two suggestions for recycling these liquids or you can call the DPW at 256-4050 for proper disposal.

Old Gasoline: A common disposal problem that many homeowners have is the disposal of leftover gasoline and gasoline/oil mixtures that are used in various landscaping machinery. Gasoline looses its potency in about three months and should not be stored or left in machinery for extended periods of time. To properly dispose of leftover gasoline or gasoline and oil mixtures, pour them into your vehicle's gas tank when the tank is nearly full.

A good solution for off season storage of your machinery such as lawn mowers, weed whackers, snow blowers, etc. is to use a gasoline "conditioner" in the fuel. This additive is available at all hardware stores and will keep your gasoline/oil mixture fresh for up to one year and eliminate the problems associated with old gas in your machinery.

Paint Thinners: Another common household disposal problem is used paint thinner. Paint thinner can be used over and over by pouring it into a large 1 gallon vessel and allowing the pigment to settle to the bottom of the container. When you need to clean a paint brush just pour a little of the thinner out into a small container, clean the brush, when finished, pour the used thinner back into the large container for the next job.

10. Water Quality Award -

"The Department recognizes the effort and dedication the Amherst DPW Water Division has manifested over the past year to meet the ever-evolving federal and state requirements. The Department also recognizes the fact that your system has also conducted many non-regulatory activities to help promote quality drinking water. It is the Department's belief that public water systems going above and beyond what is required to supply quality drinking water should be recognized for their endeavors."

Dave Terry, Program Director
Massachusetts Department of Environmental Protection
Drinking Water Program

Town of Amherst
Department of Public Works
586 South Pleasant Street
Amherst, MA 01002-2542

这份报告中有些重要的信息，讲到关于您所在社区的水的品质。请您找人翻译一下，或者请能看得懂这份报告的朋友给您解释一下。

El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguien que lo entienda bien.

នេះជាសេចក្តីរាយការណ៍សំខាន់អំពីទឹកទទួលទាននៅទីក្រុងរបស់លោកអ្នក បើមិនយល់សូមមេត្តារកអ្នកបកប្រែអ្នកដែលយល់អំពីសេចក្តីរាយការណ៍ ពន្យល់ដល់លោកអ្នក។

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